

REMARKS/ARGUMENTS

Upon the foregoing amendment, claims 1-28 and 30-49 are currently pending, with claims 1, 4, 21, 25 and 42 being the independent claims. Claim 29 was previously canceled. Claims 45-49 are withdrawn.

Based on the foregoing amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections Under 35 U.S.C. 103(a)

The Examiner has rejected claims 1-6, 13-15, 20, 25-26, 29, 30, and 41 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,371,438 to Kikuchi et al. ("Kikuchi") in view of U.S. Patent No. 4,520,238 to Ikeda ("Ikeda"). The Examiner states that Kikuchi discloses a transducer that includes a housing, vibrating hardware and "damping adhesive disposed within the housing." The Examiner recognizes that Kikuchi fails to disclose a damping liquid and relies upon Ikeda for teaching such a feature. Claim 29 was canceled in response to the previous Office Action, therefore this rejection is moot with regard to that claim. Applicants respectfully traverse this rejection with respect to the remaining claims.

The combination of Kikuchi with the teaching of a damping liquid in Ikeda is improper because adding a damping liquid to the apparatus of Kikuchi would render the apparatus unsatisfactory for its intended purpose. Kikuchi recites an improved piezoelectric transducer that provides a fabric damper that is less susceptible to damping failure caused by seeping adhesive. The transducer includes a case (1) that has an inner space (11) and a hole (12), a piezoelectric diaphragm (2) supported around its periphery on the case (1), and an acoustic resistance sheet (4)

made of a meshed cloth that covers the hole (12). Kikuchi, col. 4, lines 32-59. The combination of the case (1), the diaphragm (2) and the resistance sheet (4) encloses inner space (11). Kikuchi, col. 4, lines 39-42. As mentioned above, acoustic resistance sheet (4) is made of a meshed cloth and the cloth is provided with several hundred openings/inch. The combination of the resistance sheet (4) over the hole (12) provides “acoustic resistance damping.”

The improvement in Kikuchi consists of a recessed area (14) that surrounds the hole (12) and retains any excess adhesive which would otherwise seep over resistance sheet (4). The seepage of excess adhesive is detrimental to the damping characteristics of a fabric damper because the openings in the fabric are filled by the adhesive which would create an undesirable fluid tight seal.

The Examiner utilizes Ikeda for teaching the inclusion of damping liquid into the apparatus of Kikuchi. However, in order for a damping liquid to be included in the apparatus of Kikuchi, the resistance sheet (4) would have to be configured to provide a fluid tight seal. The Kikuchi improvement is precisely directed at preventing the inadvertent formation of such a fluid tight seal. Therefore, including a fluid tight seal in the Kikuchi apparatus would be directly contrary to the teachings of Kikuchi and would render the Kikuchi apparatus unsatisfactory for its intended purpose.

Each of claims 1, 4 and 25 recite *damping liquid* disposed within the housing. As described above, a person of ordinary skill would recognize that including a *damping liquid* in the apparatus of Kikuchi would require a fluid tight seal which would render the apparatus unsatisfactory for its intended purpose. Therefore claims 1, 4 and 25 are patentable over Kikuchi in view of Ikeda. Claims 2 and 3 depend from and include all of the features of claim 1 and for at least the same reasons are patentable over Kikuchi in view of Ikeda. Similarly, claims 5, 6,

13-15 and 20 depend from and include all of the features of claim 4 and for at least the same reasons are patentable over Kikuchi in view of Ikeda. Finally, claims 26, 30 and 41 depend from and include all of the features of claim 25 and for at least the same reasons are patentable over Kikuchi in view of Ikeda.

The Examiner rejected claims 17-19, 39, 40 and 42-44 under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. in view of Ikeda as applied to claims 1-6, 13, 20, 25-26, 29, 30, and 41, and further in view of U.S. Patent No. 5,153,363 to Fishman et al. ("Fishman"). In particular, the Examiner recognizes that neither Kikuchi nor Ikeda discloses a musical instrument and relies upon the combination with Fishman for such a teaching. Applicant respectfully traverses the rejection.

Fishman describes a light weight guitar construction that includes a piezoelectric transducer assembly (34). The transducer assembly (34) includes a piezoelectric disc (36) that is interposed between and coupled to a cap member (38) and a metallic member (40). Fishman, col. 4, lines 52-56 and Fig. 5. The transducer assembly (34) is secured in a holder (24) which is mounted on the instrument body (1) and the transducer assembly (34) is potted in a dielectric potting compound (49). Fishman, col. 4, lines 46-47 and col. 5, lines 18-20.

As described above, claims 4 and 25 are patentable over Kikuchi in view of Ikeda because adding a damping fluid to the Kikuchi apparatus would render it unsatisfactory for its intended purpose. The addition of Fishman does not correct the improper combination of Kikuchi and Ikeda. Therefore, claims 4 and 25 are also patentable over Kikuchi in view of Ikeda and further in view of Fishman. Claims 17-19 depend from and include all of the features of claim 4 and for at least the same reasons are patentable over Kikuchi in view of Ikeda and further in view of Fishman. Claims 39 and 40 depend from and include all of the limitations of claim 25

and for at least the same reasons are patentable over Kikuchi in view of Ikeda and further in view of Fishman.

Similarly, claim 42, as amended, recites a step of providing a plurality of transducers wherein each transducer includes a housing substantially filled with *damping liquid*. As described above, including a damping liquid in the apparatus of Kikuchi would render it unsatisfactory for its intended purpose and Fishman does not correct that improper combination. Therefore, claim 42 is patentable over Kikuchi in view of Ikeda and further in view of Fishman. Claims 43 and 44 depend from and include all of the features of claim 42 and for at least the same reasons are patentable over Kikuchi in view of Ikeda and further in view of Fishman.

Allowable Subject Matter


The Applicant acknowledges the Examiner's indication that claims 21-24 are allowed. Claim 21 has been amended to correct a typographical error but otherwise remains unchanged. Claims 22-24 remain unchanged.

The Examiner objected to claims 7-12, 16, 27 28, and 31-38 as being dependent on a rejected base claim. Claims 7-12 and 16 depend from claim 4 and claims 27, 28 and 31-38 depend from claim 25. As described above, Applicant asserts that claims 4 and 25 are patentable over Kikuchi in view of Ikeda and further in view of Fishman, therefore claims 7-12, 16, 27, 28 and 31-38 depend from patentable claims, thereby rendering this objection moot.

Conclusion

It is believed this amendment now has placed the application in condition for reconsideration and allowance. If necessary, the Commissioner is hereby authorized in this and concurrent replies to charge payment (or credit any overpayment) to Deposit Account No. 50-0683 of Luce, Forward, Hamilton & Scripps.

Respectfully submitted,



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Date

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